

WHAT IS CLAIMED IS:

1. A process for manufacturing a printed-on-display (POD) antenna of a wireless mobile personal terminal having a crystal liquid display (LCD), said process comprising the steps of:

- 5 a) preparing a conductive transparent material;
- b) coating a uniform layer of said conductive transparent material on a glass substrate of said LCD;
- c) coating a photoresist layer on said conductive transparent layer;
- d) coating a mask having an antenna pattern on said photoresist layer;
- 10 e) exposing said mask by ultraviolet (UV) rays;
- f) immersing said glass substrate in a developing solution for developing for removing said yet cured photoresist layer;
- g) etching said conductive transparent layer on said glass substrate; and
- h) cleaning said remained photoresist layer for forming a pattern of said POD
- 15 antenna on said conductive transparent layer of said glass substrate.

2. The process of claim 1, wherein said conductive transparent material is an indium oxide doped with tin oxide (ITO).

3. The process of claim 1, wherein said conductive transparent material is a tin dioxide (SnO₂).

- 20 4. The process of claim 2 or 3, wherein said step b) comprises the sub-steps of :
- b1) ionizing an introduced argon (Ar) by sputtering in a vacuum system,
- b2) generating argon ions (Ar⁺) and electrons by applying a plasma wherein said Ar⁺ are impinged on said conductive transparent material for causing said components of said conductive transparent material to decompose and adhere on said glass substrate
- 25 by sputtering, and
- b3) forming said uniform layer of said conductive transparent material on said glass substrate.

5. The process of claim 2 or 3, wherein said step b) further comprises the sub-steps of :

b4) decomposing said components of said conductive transparent material and adhering said same on said glass substrate by sputtering, and

5 b5) forming said uniform layer of said conductive transparent material on said glass substrate.

6. The process of claim 1, wherein said etching in said step g) is performed on said conductive transparent layer by a plasma.

7. The process of claim 1, wherein said etching in said step g) is performed on
10 said conductive transparent layer by a strong acid.

8. The process of claim 7, wherein said strong acid is formed of a solution composed of water, hydrochloric acid, and nitric acid having a predetermined ratio.

9. The process of claim 1, wherein said POD antenna is printed on said surface of said glass substrate on said outer surface of said LCD.

15 10. The process of claim 1, wherein said POD antenna is electrically coupled to a RF circuit of said personal terminal.